

## Course programme – IFI7003 Project Management in Software Engineering

Course code IFI7003	<b>Project Management in Software Engineering</b>		
Volume 6 ECTS	Contact hours: 28	Semester: Autumn	Examination
Learning objective:	To allow the student a possibility to acquire knowledge in general project management and in software project management as well as skills in software project planning.		
Short description:	<p>Introduction to the course. The basic concepts, process models and structures of projects and project management (including <i>PMBOK</i>, <i>PMMM</i>, <i>OPM3</i>, PMCD framework, <i>PRINCE 2</i>). Basic principles and methods for initiation, planning and execution of projects. Project management software. Basic principles, models and methods of software project management (cascade model, <i>XP</i>, <i>RUP</i>, <i>CMM-SW</i>, <i>CMMI-SW</i>, <i>SPICE</i>, <i>NASA SPI</i>, <i>COCOMO II</i> etc). Specifics of software projects. Software process management. Some other issues related to (software) project management.</p> <p>Independent work: Each student 1) performs three analyses based on the lecture materials and solving home assignment exercises (estimated amount of work – 48 hours); 2) prepares a project plan, or an analysis of a practical project or an analytical report of a topic in project management (43 hours); 3) composes a review of a project plan of a fellow student (22 hours); 4) assessment of five project plans of fellow students (15 hours).</p>		
Learning outcomes:	<p>A student has:</p> <ul style="list-style-type: none"> <li>- knowledge about the basic structures, models and principles of general project management and of software projects in particular;</li> <li>- skills for development of a (software) project plan;</li> <li>- ability to assess the (software) project plans.</li> </ul>		
Assessment methods:	<p>Examination. The grade is formed from three components (of equal weight): 1) project plan/analysis/analytical report, 2) presentation (written and oral) of the project plan/analysis/analytical report, 3) review and assessment of project plans of fellow students.</p> <p>It is recommended that project plans are prepared in groups. Project plans cannot be form-based; it can also be a Master's project.</p> <p>A guide is available discussing mistakes and deficiencies most often appeared in works of previous years.</p> <p>Each assessment should contain (exactly!) three major strengths and three major weaknesses of the assessed work.</p>		
Lecturer:	Peeter Normak		
Title in Estonian	Projektijuhtimine tarkvaraarenduses		

Prerequisite course	None
Compulsory literature:	Projektijuhtimine. Lecture Notes. Normak, P. (2012).  Lecture Notes and other learning materials and documents can be found at <a href="http://www.tlu.ee/~pnormak/PJ-2013-HCI">www.tlu.ee/~pnormak/PJ-2013-HCI</a> .
Replacement literature:	A Guide to the Project Management Body of Knowledge (PMBOK Guide; 2008). Project Management Institute. Highsmith, J. (2010). Agile project management: creating innovative products. Addison-Wesley. Managing Successful Projects with PRINCE2; 2005 edition. Office of Government Commerce. TSO, London. ISBN 0113309465. Software cost estimation with COCOMO II. Boehm, Barry. (2000). Information Technology Project Management. Schwalbe, K. (2002). Software project management: a unified framework. Royce, Walker. (1998). Kerzner, H. (2001). Strategic planning for project management using a project management maturity model.  PS! Replacement literature does not contain examples discussed in classes.
Subscription to the course and examination	Subscription is free.  Examination consists in three parts with the following deadlines: <ol style="list-style-type: none"> <li>1) Oral presentations of examination works are taking place on 13<sup>th</sup> of December; presentation should be made in MS Powerpoint or OO Impress.</li> <li>2) Examination works should be sent to the given address during one week after presentation.</li> <li>3) Review and assessments should be sent to the given address before 30.12.</li> </ol>
Requirements of independent work	1) Performing home assignments given at the End of each class; discussion of home assignments takes place at the beginning of next class; 2) Timely execution of all assignments necessary for passing the course (described in previous section).
Assessment criteria	1. criterion (examination work)  A – examination work excellent in most of the criteria and very good in others: existence of all necessary components/aspects, logical and thorough approach, language use, topicality/importance of the problem. B – examination work has a few problems, the subject of the project is topical. C – examination work has a few deficiencies, the subject of the project has a local importance. D – examination work has some major deficiencies. E – examination work has some major deficiencies and topic is not significant.

	<p>2. criterion (presentation of examination work)</p> <p>A – the presentation (topicality, originality, realistic, consistency, structuring, clarity, interesting, discussion with the listeners, added value to the listeners) is excellent.  B – the presentation is very good.  C – the presentation is good.  D – the presentation is satisfactory.  E – the presentation is weak.</p> <p>3. criterion (review and assessments)</p> <p>A – review and assessments are completely adequate and thorough.  B – review and assessments are adequate and thorough.  C - review and assessments have some gaps (some aspects are not discussed or have inadequate treatment).  D - review and assessments have some deficiencies (some aspects are not discussed or have inadequate/wrong treatment).  E - review and assessments have significant deficiencies (several aspects are not discussed or have inadequate/wrong treatment).</p>
<p>Information  kursuse sisu kohta,  kursuse jaotumine  teemade kaupa sh  kontaktundide ajad</p>	<p>The classes take place on Fridays at 9:00-12:00 in A-303.</p> <p>6.09: <b>Introduction</b> (organization of the course and assessment).  <b>Basic concepts and models.</b> The concept of a project, examples. Life cycle of a project and of a product. The concept of project management (PM). The competency areas of PM (according <i>PMBOK Guide</i>), process groups, activities and artifacts. Competency framework of project managers PMCD FW. PM maturity models <i>PMMM</i> and <i>OPM3</i>. PM in European e-Competence Framework <i>e-CF</i>.  <b>Composition of project teams</b> and presentation (by the teacher) of the first home assignment.</p> <p>4.10: <b>Seminar.</b> Presentations of project teams:  <ul style="list-style-type: none"> <li>○ Objective of the examination work (project)</li> <li>○ Needs analysis</li> <li>○ Analysis of possible donors</li> </ul> Discussion of the home assignment.  <b>Initiation of a project.</b> Prerequisites for initiating a project. The major risks related to the projects. Determination of the objective of a project and necessary resources. The main financing schemes of projects, and useful sources of information. Composition of an initial plan (charter) of a project. Forming a project team.</p> <p>18.10: Discussion of the home assignment.</p> <p><b>Project planning.</b> Feasibility study. Project planning time-table, determination of sub-goals and activities, the structure of a project plan, time-table, project administration, quality assurance. Application of expected results, budget, summary of a project plan. Project framework matrix. Composition of recommendations and reviews. PR-activities.</p>

	<p><b>Launching a project:</b> management plan, scope management, information management, determination of duties and rights.</p> <p>1.11: <b>Seminar.</b> Presentations of the project teams:</p> <ul style="list-style-type: none"> <li>○ Activities of the project</li> <li>○ The budget</li> </ul> <p><b>Running a project:</b> reporting, quality control, resources management, staff development, role of leadership, creating of a necessary environment, devotion of team members, creativity stimulation, teamwork; conflict management.</p> <p><b>Completion of a project.</b></p> <p><b>Related questions</b> (portfolio management, certification of project managers, standards, leading institutions in <i>PM</i> theory and practice etc).</p> <p>15.11: Discussion of the home assignment.</p> <p><b>Basic principles of software projects:</b> specifics of software projects, critical success factors, phases of software process, personnel and change management, cooperation with upper management, requirements development, quality assurance. Software design, software delivery, development cost models, management principles.</p> <p><b>Seminary:</b> Project management software (Tutor: Martin Sillaots).</p> <p>29.11: <b>Models and methodologies:</b> general overview, waterfall model, two-phase model, multiple phase model, <i>RUP</i>, <i>XP</i>, capability maturity model for software <i>CMM-SW</i>, <i>NASA</i> software process improvement model. <b>Related questions:</b> Software process assessment methodology <i>SPICE</i>. <i>COCOMO</i> cost model. Positive experience in software development. Principles of software development. Standards. Leading institutions in software development theory.</p> <p>13.12: <b>Examination:</b> presentations and discussion of examination works.</p>
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Õppeainet kureeriv üksus:	Informaatika instituut
Kursuseprogrammi koostaja	Peeter Normak
Allkiri:	
Kuupäev:	17.08.2013

Kursuseprogramm registreeritud akadeemilises üksuses

Kuupäev	26.08.2013
Õppeassistendi nimi	Merilin Tohver
Allkiri	